

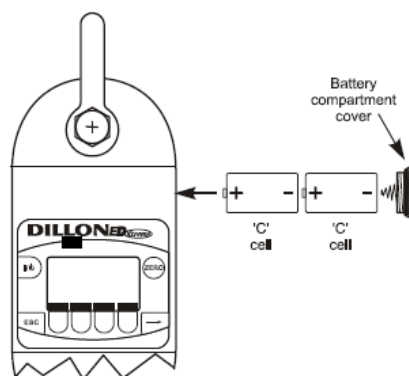
## LTL Quick User Guide

### Introduction

The LTL electronic dynamometer is a force measurement load sensor and digital readout in one instrument. The LTL can be used to measure tension or weight. A Communicator can remotely view the display and control the instrument. **Check your user manual CD for complete setup and operating instructions.**

### Installing Batteries

Unscrew and remove the battery compartment cover. Place two 'C' size batteries into the battery compartment as shown below and screw the cover back on tightly.



### Communicator

The Communicator has 4 AA batteries. To replace, remove rear battery cover and replace with fresh batteries in the proper arrangement.

### Battery Life

The time required between battery changes can vary with usage, functions enabled, temperature, duration of use and recovery time, display update rate, battery grade and more.

To maximize battery life:

- Disable radio if not being used. Even if an optional radio board is not installed, the software will run, if enabled.
- Disable other functions such as RS-232 and backlight.
- Warm environments result in longer battery life over cool environments.
- Use high quality alkaline batteries.
- Turn off instrument when not in use. Alkaline batteries partially recover when the instrument is off.

→ **Please note...** Remove batteries from the instrument when using the external AC power supply

### Care

The LTL is built to be rugged and endure typical industrial and commercial use. It is still, however, a precision instrument that should be treated with care. Store the instrument in its carry case with power off. Remove batteries if not being used.

### Accuracy

Cooper -supplied shackle pins and centering spacers provided by are required to achieve highest accuracy. The force being measured must be in line with the unit. Apply load in the center of the shackle bows & insure the instrument is centered on the shackle pin. Torque and bending loads should be relieved.

Check your user manual on the CD for further detail on obtaining best accuracy.

➔ **Please note... IMPORTANT:** *This equipment must be routinely checked for proper operation and calibration. Application and usage will determine the frequency of calibration required for safe operation.*

## Safe Operation

Any zeroed deadload must be considered as part of the ultimate load.

Although this instrument has a substantial overload protection rating, the instrument should not be used above the rated capacity. Doing so can significantly impact fatigue life of the instrument and cause premature and abrupt failure. If a higher capacity reading is needed, Cooper insists that a larger instrument be used.

Do not grind, stamp or deform the metal on the dynamometer body in any way.

Any significant damage or deformation to the loading element is cause for evaluation by Cooper, particularly in the element side members to the right and left of the display.

Always observe all safety code standards and ratings when lifting or in hazardous environments.

**Insure all hardware, fittings and line used to sustain the load are properly sized and rated for the application. Have the system evaluated by a qualified engineer if any question or uncertainty exists.**

Check your user manual on the CD for further detail on obtaining best accuracy.

## Radio Information

The radio technology used in the radio equipped LTL and Communicator is a 2.4 GHz digital spread spectrum system designed for communications reliability.

Tips for best performance:



- Keep the Communicator and LTL as close as possible together.
- Keep metal and other dense objects as far from the instruments as possible.
- Normally the higher that both the LTL and Communicator are above the ground, the better the performance and range will be.

Check your user manual on the CD for further detail on communications.

Radio systems are vulnerable to interference, resulting in delays between the dynamometer scale and remote. In some instances the display shown on the remote may be several seconds old. This can result in a hazardous situation when the system is used as the reference for acceptable loads in cases such as proof loading or monitoring of overload. When timely updates are critical, a communication cable should be used to physically connect the LTL and Communicator. Alternately, the LTL display can be observed directly

➔ **Please note... WARNING!** *Low power radio systems should not be used in applications where timely updates of readings are required for safety purposes.*

## Annunciators

|   |  |
|---|--|
| <b>Force</b>  | This tells you that the display is showing live force measurement at the moment. Will show Peak when viewing Peak Mode.  |
| <b>lbf</b>  | Current unit of measure is lbf in this example. May also be kgf or N.  |
| <b>~</b>  | Motion symbol. This appears when the force is in motion. This symbol disappears when motion ceases.  |
| <b>(Y)</b>  | The is configured ON and is in communication with a Communicator   |
| <b>Y</b>  | The radio is configured ON but is not in communications with any Communicator.   |
|  | The radio is configured ON but is not in communications with any Communicator. The battery in the device is too low to power the radio electronics. The LTL will continue to display but not communicate by radio. |
|  | Battery annunciator. This shows approximate remaining battery life.  |



Capture of a new peak value. This annunciator will remain lit for a few seconds.



Press the **On/Off** key to power up and power down the LTL.

## Zeroing

Zeroing allows the weight or load of fixturing to be invisible to the measurement. **The zeroed load must always be considered as part of the maximum capacity.** Press the **ZERO** key to zero the display.

## Displaying Peak Force

The LTL will store the peak force applied until that reading is cleared. To display the peak force applied, press the **Mode** softkey until **PEAK** is displayed. Clear the peak reading by pressing the **Clear** softkey.

## Installing Spacers

High capacity dynamometers with shackles of 50,000 lbf/20,000kgf capacity and up, use spacers on each side of the LTL to insure proper centering for performance and safety reasons.

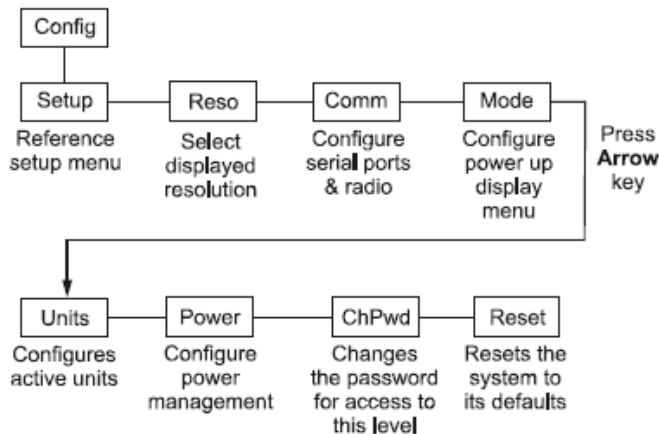
Do not use the dynamometer with shackles if the spacers are not installed. The LTL design incorporates an innovative method to retain these spacers, if desired, to ease shackle installation.

See User Manual on the CD for more detail on retaining spacers.

## Configuration Menu

To get to the Configuration Menu shown in Figure 1.1, follow these steps:

1. Press the **Config** softkey... The display prompts for a password.
2. The default password is **0** (zero). Use the **Num** keys to enter the password and press the **Enter** key when done... The keys shown in Figure 1.1 appear.
3. Press the **Comm** softkey to configure communications. Several common configurations are shown in the following section...



**Figure 1.1 Configuration menu**

## Common Configurations

### **LTL being used stand-alone** (no RS-232 or Communicator remote)

Key Settings (LTL): COM1 Trans Level – Disabled

COM2 Trans Level – Disabled

### **LTL connected to a computer**

Key Settings (LTL):

COM1 Trans Level – Disabled

COM2 Trans Level – RS-232 (all other parameters should agree with peripheral such as baud, data bits & parity)

### **Communicator connected to one LTL by wire**

Key Settings (LTL and Communicator):

COM1 Trans Level – Disabled

COM2 Trans Level – RS-485 Address: 1 Channel: 1

### **Communicator talking to one LTL by radio**

Key Settings (Communicator):

COM1 Trans Level – Disabled or RS-232

COM2 Trans Level – RF

Radio Channel (1-64): 1

Number of LTLs in the Network (1-15): 1

Address of LTL 1: 1

Key Settings (LTL):

COM1 Trans Level – Disabled

COM2 Trans Level – RF

Radio Channel (1-64): 1 Network ID (1-15): 1

Network Identifier: (enter characters or digits to identify this specific LTL) (most useful if multiple LTLs are networked to one Communicator)

See the **Common Configurations** in the User Manual on the CD for more detail on configurations.

**Check your user manual CD for complete operating instructions.**